

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A flow field plate for a fuel cell, the flow field plate having a front side, for defining a chambers with a another complementary flow field plate ~~for~~ and a membrane electrode assembly, and a rear side, the flow field plate including:

at least two apertures for a reactant gas for supply to said chambers;

on the front side thereof, ~~reactant gas flow field channels;~~

for each of the apertures, an aperture extension extending on the rear side of the flow field plate; and

for each aperture, at least one slot extending through the flow field plate from the back side to the front side thereof, to provide communication between the corresponding ~~aperture~~ extension and the reactant ~~action~~ gas flow channels.

2. (Original) A flow field plate as claimed in claim 1 which includes sealing surfaces on the front and rear sides, for forming a seal with adjacent elements of fuel cell, wherein the sealing surface on the front side of the flow field plate includes, for each aperture, a first sealing surface portion enclosing the corresponding aperture and separating at least one slot from the corresponding aperture and on the rear side thereof, a second sealing surface portion enclosing together said at least one slot and the aperture.

3. (Currently amended) A flow field plate as claimed in claim 2, which includes, for each of the apertures, a plurality of slots.

4. (Currently amended) A flow field plate as claimed in claim 3, wherein each aperture extension is provided with a plurality of projections, defining flow channels extending from the apertures to the slots.

5. (Currently amended) aA flow field plate as disclaimed in claim 3, which includes:

at least two second apertures for a second reactant gas;

on the front side thereof, for each second aperture, a second aperture extension and a plurality of second projections provided in the second aperture extension, ~~for abutting complementary projections of a second flow field plate for the~~ second reactant gas.

6. (Currently amended) A flow field plate as claimed in claim 5, which includes, on the rear thereof, for each second aperture a rear sealing portion enclosing the corresponding second aperture and on the front thereof, a second, front sealing portion enclosing the corresponding second aperture and associated second aperture extension, wherein the second front and rear sealing portions include sealing surface segments offset from one another.

7. (Original) A flow field plate as claimed in claim 6, wherein each sealing surface portion comprises a groove for receiving a seal.

8. (Original) A flow field plate as claimed in claim 6 or 7 which includes at least two third apertures for a coolant flow; on the rear side thereof, flow channels providing flow paths between the third apertures for the coolant; and on the front thereof sealing portions enclosing the third apertures.

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9. (Currently amended) A fuel cell assembly including at least one fuel cell, wherein each fuel cell comprises:

first and second complementary flow field plates, each including a front sides and rear side, with the front sides surfaces facing one another and defining a fuel cell chamber;

a membrane electrode assembly and gas diffusion media provided within the fuel cell chamber;

at least two first apertures in each flow field plate for a first reactant gas and at least two second apertures in each flow field plate for a second reactant gas;

wherein the first flow field plate includes: first reactant gas flow channels on the front side thereof; first slots extending from the first reactant gas flow channels to the rear side thereof; for each of the first apertures thereof, on the rear site side thereof, a first aperture extension, providing communication between the first apertures thereof and said first slots; and

wherein the second flow field plate includes: second reactant gas flow channels on the front side thereof; second slots extending from the second reactant gas flow channels to the rear side thereof; for each of the second apertures thereof, on the rear side thereof, a second ~~aperture~~ extension, providing communication between the second apertures thereof and said second slots.

10. (New) A flow field plate for a fuel cell, the flow field plate having a front side, for defining chambers with a complementary flow field plate and a membrane electrode assembly, and a rear side, the flow field plate including:

at least two apertures for a reactant gas for supply to said chambers;

on the front side thereof, reactant gas flow channels;

for each of the apertures, an extension extending on the rear side of the flow field plate; and

for each aperture, at least one slot extending through the flow field plate from the back side to the front side thereof, to provide communication between the corresponding extension and the reactant gas flow channels, wherein the flow field plate includes sealing surfaces on the front and rear sides, for forming a seal with adjacent elements of fuel cell, wherein the sealing surface on the front side of the flow field plate includes, for each aperture, a first sealing surface portion enclosing the corresponding aperture and separating at least one slot from the corresponding aperture and on the rear side thereof, a second sealing surface portion enclosing together said at least one slot and the aperture, and wherein each extension is provided with a plurality of projections, defining flow channels extending from the apertures to the slots, the projections providing support for the respective first sealing surface portion.

11. (New) A fuel cell assembly including at least one fuel cell, wherein each fuel cell comprises:

first and second complementary flow field plates including a front side and rear side, with the front surfaces facing one another and defining a fuel cell chamber;

a membrane electrode assembly and gas diffusion media provided within the fuel cell chamber;

at least two first apertures in each flow field plate for a first reactant gas and at least two second apertures in each flow field plate for a second reactant gas;

wherein the first flow field plate includes: first reactant gas flow channels on the front side thereof; first slots extending from the first reactant gas flow channels to the rear side thereof; for each of the first apertures thereof, on the rear side thereof, a first extension, providing communication between the first apertures thereof and said first slots;

wherein the second flow field plate includes: second reactant gas flow channels on the front side thereof; second slots extending from the second reactant gas flow channels to the rear side thereof; for each of the second apertures thereof, on the rear side thereof, a second extension, providing communication between the second apertures thereof and said second slots;

wherein the first flow field plate includes sealing surfaces on the front and rear sides, for forming a seal with adjacent elements of the fuel cell, wherein the sealing surface on the front side of the first flow field plate includes, for each first aperture, a first sealing surface portion enclosing the corresponding first aperture and separating at least one first slot from the corresponding first aperture, and on the rear side thereof, a second sealing surface portion enclosing together said at least one first slot and the corresponding first aperture;

wherein the second flow field plate includes sealing surfaces on the front and rear sides, for forming a seal with adjacent elements of the fuel cell, wherein the sealing surface on the front side of the second flow field plate includes, for each second aperture, a first sealing surface portion enclosing the corresponding second aperture and separating at least one second slot from the corresponding second aperture, and on the rear side thereof, a second sealing surface portion enclosing together said at least one second slot and the corresponding second aperture; and

wherein, on each of the first and second flow field plates, each of the first and second extensions is provided with a plurality of projections, defining flow channels extending from the apertures to the respective first and second slots.

12. (New) A fuel cell assembly as claimed in claim 11, including a plurality of fuel cells, wherein, for adjacent fuel cells, the rear sides of the first and second flow field plates abut one another, and wherein the second flow field plates include on the rear sides thereof a plurality of projections corresponding and abutting the projections of the first flow field plates and defining flow channels corresponding to the first extensions, to increase the flow cross section between the first apertures and the first slots, and the first field flow plates include on the rear sides thereof a plurality of projections corresponding and abutting the first-mentioned projections of the second flow field plates and defining flow channels corresponding to the second extensions, to increase the flow cross section between the second apertures and the second slots.

13. (New) A fuel cell assembly as claimed in claim 12, wherein the first and second flow field plates are substantially rectangular and, for each flow field plate, the at least two first apertures are provided on diagonally opposite corners, and the second apertures are provided on the other diagonally opposite corners.

14. (New) A flow field plate for a fuel cell, the flow field plate having a front side, for defining chambers with a complementary flow field plate and a membrane electrode assembly, and a rear side, the flow field plate including:

at least two apertures for a reactant gas for supply to one of said chambers;



on the front side thereof, reactant gas flow channels;

for each of the apertures, an extension extending on the rear side of the flow field plate; and

for each aperture, a plurality of slots extending through the flow field plate from the back side to the front side thereof, wherein each of the plurality of slot provides communication between the corresponding extension and reactant gas flow channels.
